DOCUMENT RESUME

ED 294 849 SP 030 207

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TITLE The Use of Financial Aid To Attract Talented Students to Teaching: Lessons from Other Fields. Report for the California Commission on the Teaching Profession.
PUB DATE Aug 85
NOTE 60p.
PUB TYPE Reports - Descriptive (141)

EDRS PRICE MF01/PC03 Plus Postage.
DESCRIPTORS Gifted; *Grants; Higher Education; *Scholarships; *Student Financial Aid; *Student Recruitment; *Teacher Education Programs

ABSTRACT

Examples from other career fields are discussed in the light of the feasibility of using various kinds of financial incentives for recruiting talented students into teaching. Three primary categories of student financial aid are examined: loans, grants, and sponsored employment. Descriptions are given of four public service programs using these forms of aid in the fields of the health professions, the military, law enforcement, and the National Defense Education Act. All of these programs use either loan forgiveness or service-payback financial aid. A brief description is given of some of the advantages and disadvantages of grants, low-interest loans, and sponsored employment programs. It is pointed out that education policymakers can learn a great deal from prior use of financial aid as a recruiting device, and that although recruitment issues for the teaching profession are unique, patterns in targeted financial aid recur. The final two sections of this paper review these findings, offer guidelines for future financial aid programs, and provide recommendations for programs designed to recruit talented persons into teaching. (JD)

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ED294849

THE USE OF FINANCIAL AID TO ATTRACT TALENTED STUDENTS TO TEACHING: LESSONS FROM OTHER FIELDS

By David M. Arfin

August, 1985

REPORT FOR THE CALIFORNIA COMMISSION ON THE TEACHING PROFESSION

SP030207

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John F. Kennedy once said that children are the world's most valuable resource and its best hope for the future. Yet, today in this country, that future is threatened by an educational system plagued with a growing teacher shortage. This deficiency has attracted the attention of many policymakers and the American public. The problem stems from the profession's inability to attract an adequate supply of high-caliber individuals.

Student financial aid has been proposed as one incentive to attract talented students to teaching. The National Commission on Excellence in Education's (1984) report recommends that, "incentives, such as grants and loans, should be made available to attract outstanding students to the teaching profession, particularly in those areas of critical shortage."[1] The responsibility of providing incentives for prospective teachers will continue to fall largely upon the states due to the federal government's apparent lack of will to implement this recommendation.[2]

Financial aid has played an important role in American higher education since 1643 when Lady Anne Mowlson left one hundred pounds to Harvard University to help "some poor scholler."[3] Since then, different forms of financial aid to students have been used in such diverse ways as to reward military veterans for past service to society (G.I. Bill), enhance our technological base (National Defense Educational Act [NDEA] of 1958), as well as increase institutional choice and access for needy students (Pell Grants, Guaranteed Student Loans). The popularity of these programs led to the use of financial aid as an incentive for recruiting manpower into the health, military, law enforcement, and teaching fields. This

report describes how student financial aid has been utilized to affect the labor supply pool in these four public-service professions.

What follows is a description of these programs, including their objectives, participation rates, funding levels and mechanisms, administration, and success as determined by evaluations and audits over the years. In a latter section of the paper I will recommend educational policies that this analysis suggests would be most effective.

Student financial aid can be issued in three primary categories: loans, grants, and sponsored employment. Included in the general category of loans are subsidized student loans (Guaranteed Student Loan); loan forgiveness, in which part or all of a loan can be cancelled if the recipient chooses to cancel a portion of the debt through service (NDEA); and service-payback, whereby a loan recipient is required to provide a service as an *a priori* condition of assistance (ROTC). The second form of aid is direct grants or scholarships. These are often used to reward academic achievement or to promote access to institutions. The final category is sponsored employment, in which a student is issued finanical aid through subsidized employment while attending school. Experience demonstrates that these various forms of aid produce differing effects on the individuals to whom they are directed. Those financial aid programs designed to recruit students into specific professions have typically taken the form of loan forgiveness and service-payback.

HEALTH

Public concern over the inadequate supply and geographic maldistribution of health professionals during the 1960s and 1970s prompted several large federal student aid programs, including the loan forgiveness provisions of the Health Professions Student Assistance Program (HPSAP) and the service-payback National Health Service Corps Scholarship Program (NHSCSP). The theory underlying both programs is similar -- that health professionals will work in underserved areas in exchange for higher education benefits -- but as we shall see, the programs had very different effects.

Health Professions Student Assistance Program

Started in 1965, HPSAP provided low-interest, long-term loans to needy students pursuing degrees in medicine, dentistry, osteopathy, optometry, pharmacy, podiatry, and veterinary medicine.[4] Upon completion of their degrees, those going to work in a Health Manpower Shortage Area (HMSA)[5] became eligible to have their outstanding HPSAP loans forgiven at annual rates of 10% and 15%.[6]

Participation in the voluntary HPSAP loan forgiveness program was extremely low. Under the original law, of the 30,000 students who borrowed money between 1965 and 1972, only 219 obtained loan forgiveness.[7] Of those who did receive loan forgiveness, over four-fifths would have practiced in the same location regardless of this "incentive." In its (1974) report, the

federal govenment's General Accounting Office (GAO) concluded "the HPSAP's Loan cancellation provisions have not effectively attracted physicians and dentists to shortage areas."[8]

Congress recognized this low participation rate and authorized more liberal forgiveness provisions. The new law became operational in 1973 and allowed 85% of all educational loans (not solely graduate school loans) to be forgiven for health professionals serving three years in a shortage area. However, even these more liberal loan repayment provisions failed to induce large numbers of professionals to work in medically underserved areas. Only 762 of the 45,000 graduating physicians eligible for loan forgiveness between 1973 and 1977 had their loans forgiven.[9] Moreover, when those who were having their loans forgiven were questioned about the factors that led to their working in shortage areas, only 16% of these practicioners responded that loan repayment was a major factor.[10] The GAO's follow-up study (1978) found that, "the more liberal loan repayment program does not seem to have been a significant factor in encouraging physicians to voluntarily serve in health manpower shortage areas."[11] As of June, 1984, of the $682 million loaned to students in the health professions, only $1.4 had been forgiven.[12]

Since the goal of the HPSAP loan forgiveness program was to induce individuals to practice in underserved areas, the program's real effects were negligible. In retrospect, the program's major shortcoming was that a majority of the students who had obtained loans were not aware of the loan forgiveness provisions. An astonishing 29% of those receiving loan forgiveness learned of this

provision only after they were already in practice.[13] In addition, the loan cancellation provisions did not provide a sufficient financial incentive to attract health professionals into shortage areas. The Department of Health, Education, and Welfare estimated that the average physician graduated from medical school approximately $7,000 in debt, and that the average annual forgiveness rate was $2,500.[14] In view of a physician's annual salary, this $2,500 a year "bonus" did not provide an incentive sufficient to induce large numbers of health professionals to practice in the targeted areas. Fortunately, Congress recognized and learned from the weaknesses of this program as evidenced in its successor, the National Health Service Corps Scholarship Program.

National Health Service Corps Scholarship Program

The National Health Service Corps Scholarship Progam (begun in 1973) was much more successful in attracting large numbers of health professionals to work in underserved areas. The NHSCSP grew out of the civil rights movement, which called attention to the inadequate health care provided to many Americans, particularly in the nation's rural areas. The objective of this program was, "to establish a generous scholarship program for students who will undertake service in an area or program into which the Secretary finds it difficult to attract health professionals lacking such a scholarship program."[15]

The term "scholarship" in this instance is a misnomer because the aid is actually a service-payback loan. Although NHSCSP

scholarships covered students' medical school costs, they were designed to produce a cadre of health practitioners legally obligated to pay back their "scholarships" through public service. NHSCSP scholarships were allocated according to selection criteria that emphasized applicants' prior work experience in shortage areas, personal background, faculty recommendations, desire to practice primary-care in a shortage area, and academic record. NHSCSP paid accepted students' tuition, fees, books, and equipment, plus a $400 monthly stipend for living expenses. In return, recipients were required to work in a clinic one year for each year of assistance (with a two year service minimum) in a rural or urban HMSA. Since the program's inception, 13,559 health professionals have been awarded NHSCSP scholarships and have already served or have committed themselves to serve in shortage areas.[16]

The Corps' ability to attract health professionals is attributed largely to the value of the scholarship. The correlation between the costs of medical school and the NHSCSP participation rate is evidenced by the fact that even though only 40% of U.S. medical students are enrolled in private medical schools, 59% of the NHSCSP scholarship recipients attended private schools.[17] Indeed, the ten medical and osteopathic schools with the highest number of NHSCSP scholars were all private schools.[18] Finally, the average value of an NHSCSP scholarship award in 1981-82 was $14,465. This figure is much closer to the average cost of attending a private medical school ($15,819) than it is to the

$8,606 that in-state residents attending public medical schools pay.[19]

Interestingly, the NHSCSP attracted a high particpation rate among ethnic minorities, particularly black and Hispanic students. For example, in 1979-80, 8.1% of the NHSCSP recipients were Hispanic, even though only 3.9% of the medical student population was Hispanic. Likewise, black medical students were four times more likely to participate in the NHSCSP than their white counterparts.[20] This trend becomes relevant in light of the under representation of minorities on school faculties.

An important element in a service-payback program's ultimate success is communication between the program administrators and participants. In this regard, the NHSCSP has had a shaky record. During its heyday in the late 1970s, the Corps was in constant contact with its scholars through its "Acclimation" program. Channels of communication included the magazines Commitment and Public Health Reports, as well as the newsletters NHSC Notes and Acclimation News. The second mode of communication was through regional conferences that addressed various aspects of the Corps' work. The third component was a network of student and faculty "advocates" at medical schools. The advocates served as liaisons between the medical school students and the Corps' administration. Finally, a toll free hot-line was established to provide scholars with answers to their questions. This "Acclimation" program successfully kept scholarship recipients abreast of opportunities and expectations, but when the

NHSCSP lost much of its funding in the 1980s, most of these means of communication were terminated.[21]

The NHSCSP confronted a number of problems. Although many students were eager to receive financial aid, they were less enthusiastic about actually serving in an HMSA. Under the "old" law (pre-1977), individuals who failed to meet their obligations could "buy-out" (pay back the government in monetary payments in lieu of service) the actual amount of their scholarships. The relatively inexpensive "buy-out" cost led many students to regard the aid more as a student loan than as a serious service commitment.

Congress recognized this flaw by enacting the "new" (post-1977) law which required defaulters to pay back three times the amount of the "scholarship" plus interest at the maximum prevailing rate in the District of Columbia (currently 24%). Thus, a defaulter confronted a bill of up to a quarter million dollars.[22] The result of this new law and tighter enforcement standards has been a much higher rate of service by NHSCSP scholars in medically underserved areas. Default rates did climb as high as 35% for those expected to serve in 1979, but this rate steadily dropped to the current 13.5% level.[23]

In addition to the tripling of the "buy-out" costs, dramatic improvement in the service-return ratio is attributed to the following factors:

1. Improved data management systems. They help the Department of Health and Human Services (DHHS) to quickly and accurately track down defaulters.

2. Improved communications with debtors. NHSCSP scholars now receive "welcome" letters reminding them of their obligations to the U.S. government. Those in breach of their contract are subsequently sent "demand" letters that restate their commitments.
3. Closer coordination with enforcement arms of government. The Department of Justice and the Public Health Claims Office are notified to pursue those who breach their contracts.
4. Publicity. This includes publishing the names of defaulters.
5. The Debt Collection Act of 1982. This allows the DHHS to notify credit bureaus of outstanding debts.
6. A "get-tough" policy by new program administrators.[24]

This experience demonstrates that strong penalities levied against potential defaulters, combined with rigorous enforcement mechanisms, contribute to the success of a service-payback program's objectives.

Another shortcoming was the length of the "pipeline" -- the time lapse between entry to training and actual service. For example, an entering medical student may face four years of medical school and three years of residency before starting to work at an NHSCSP site. Much can happen during seven years to affect an individual's willingness to fulfill the commitment. A doctor may choose not to practice in a primary-care capacity, develop a distaste for living/working with an indigent population, or marry

someone who refuses to live in the placement area. The pipeline problem also occurs in the ROTC program.

Despite these drawbacks, the NHSCSP has provided a tremendous boon to health care for millions of Americans who otherwise would have received inadequate service. The Health Resource Administration concluded that,

> The [NHSCSP Scholarship] program is a viable mechanism for the development of health manpower and has demonstrated that it can provide the National Health Service Corps with the manpower resources that are necessary if the Corps is to have an effective impact on the populations and areas in need of health benefits.[25]

MILITARY

The archetype service-payback scholarship program is the armed forces Reserve Officer Training Corps (ROTC) scholarship program. ROTC scholarships are awarded to college students in exchange for a commitment to serve in the military at a later date. The ROTC program became especially important during the past decade when volunteer forces replaced the draft. ROTC programs were called on to provide the Army with three-fourths of its commissioned officers. In this section I explain how the Army -- the largest service branch -- has been able to replenish its officers with high-quality personnel through the use of student financial aid.

While it may appear anomolous to compare military service with teaching, these careers have a great deal in common. Both fields provide public-services, pay adequate wages, and carry relatively low levels of social status compared with other private sector management and professional workers. Additionally, both fields' traditional recruitment advantages have disappeared. Just as education lost its "hidden subsidy" when new opportunities became available to women and non-whites in the last generation, the military lost its "hidden subsidy" when conscription was replaced by the volunteer system. This loss, along with public reports of incompetent personnel and disenchantment with government institutions in general, rendered it difficult for each field to attract competent recruits in sufficient numbers. Thus the Pentagon turned to a solution popular a generation earlier -- the

use of educational benefits to recruit talented college students into service.

Students qualify for ROTC scholarships by scoring above a certain cutoff point on their Colege Board exams,[26] passing a physical exam, and performing satisfactorily in a personal interview. ROTC scholarships cover the costs of a student's tuition, books, and fees, and a living stipend of $100 per academic month. Military recruiters mention also post-service benefits, including home loans at discounted rates, bonus points for many government jobs, and the option to work in the reserves during school. As with the NHSCSP program, the scholarship covers full tuition and does not require applicants to demonstrate financial need.

In return for these benefits, ROTC scholarship recipients receiving two, three, or four-year scholarships must commit themselves to four years of active duty or eight years in the reserves. Obligations during college years differ by campus. For example, at the University of California, Los Angeles each scholarship recipient must enroll in ROTC classes and participate in a leadership lab. Across town at the University of Southern California, physical training is required every morning at 6:00 A.M !

The military is successful at enrolling thousands of officer-quality college students every year via ROTC largely due to its aggressive and innovative recruitment stategy, which effectively addresses both the extrinsic and intrinsic needs of the potential recruit. The extrinsic rewards, which are based on the Pentagon's underlying belief that the military can buy people's services,

include items such as scholarships, salaries, benefits, and pension plans. Although the intrinsic components are not novel, they appeal to a person's need to feel fulfilled. This is best demonstrated by the "Be all that you can be" advertising slogan, which challenges young persons to realize their potential. Education policymakers can learn from this model that an effective recruiting strategy synthesizes both intrinsic and extrinsic concerns.

Enrollment patterns in ROTC scholarship programs mirror those of the NHSCSP scholarship program in that participation rates correlate positively to the cost of tuition. ROTC scholarships cover the costs of tuition, regardless of whether one attends a public or private university. Consequently, the scholarship's value is relatively greater at private schools which charge higher tuition. The following chart of scholarship patterns at major California universities with Army ROTC programs demonstrates that the participation rate is significantly higher at private schools.

ARMY ROTC 4-YEAR SCHOLARSHIP PARTICPATION RATES AT MAJOR CALIFORNIA UNIVERSITIES: PRIVATE VS. PUBLIC[27]

	# ARMY ROTC	ELIGIBLE UNDERGRADUATE STUDENT POP.	ROTC SCHOLARS/ 1,000 STUDENT POP.
PRIVATE			
UNIV. SOUTHERN CAL.	30	13633	2.2
CLAREMONT COLLEGES	17	2179	7.8
UNIV. SAN FRANCISCO	19	688	27.6
UNIV. SANTA CLARA	6	3581	1.7
TOTAL (PRIVATE)	**72**	**20081**	**3.6**
PUBLIC			
U.C. DAVIS	6	12973	0.5
U.C. BERKELEY	9	20249	0.4
U.C. LOS ANGELES	3	22,055	0.1
U.C. SANTA BARBARA	6	14669	0.7
SAN JOSE STATE	2	15713	0.1
TOTAL (PUBLIC)	**24**	**69976**	**0.3**

These figures show that students enrolled in private schools in California are ten times more likely to enroll in the ROTC 4-Year Scholarship Program than their counterparts at state-supported universities. This phenomenon illustrates that the enrollment rate is positively correlated to the value of the scholarship.

Just as with the NHSCSP, the military confronts the problems of the long "pipeline." By offering four-year scholarships to promising high school seniors, the military runs the risk that recruits

may change their plans during the next few years because of new professional goals, pressure from a new college environment, fear of active duty, or philosophical doubts. Evidence of this career uncertainty surfaced in the National Longitudinal Survey of the High School Class of 1972, which found that fewer than one-fourth of all those who had planned to enter military service after high school graduation actually enlisted.[28]

The military has taken steps to protect the ROTC program from widespread abuse by new recruits. For example, prior to 1983, ROTC scholarship recipients were permitted to accept the program's benefits and were not required to make a commitment to any service until the beginning of their junior year. As a result, many students accepted a "free ride" for two years, and would then drop out before committing themselves to service. Meanwhile they would receive benefits totaling $25,000, leaving the military empty-handed. Recognizing this flaw, Congress pushed the commitment point up one year, to require recruits to decide in their sophomore year whether to enlist. Recruiters believe this change will reduce abuse of the program.

Enforcement of the scholarship's terms also helps the military minimize its personnel losses. This is accomplished by actively tracking and prosecuting those who accept scholarships and then renege after making a contractual agreement. Military Science professors regularly inspect the academic progress of their students, and convene a Board of Officers hearing when a student violates the contract. Possible penalties include disenrollment from the program, repayment of the scholarship, or even service in

an enlisted capacity. Refusal to comply with such military orders could result in dishonorable discharge, pursuit by the IRS, and/or prosecution by the Department of Justice. Due to their severity, these penalties effectively deter violations, and, therefore, are rarely implemented.

Another important component of the ROTC program is the constant communication between administrators and participants. Military Science Departments offer a variety of academic classes, leadership labs, counseling sessions, and summer programs at military bases. The many channels of communication allow ROTC scholars the opportunity to discuss regularly their experiences with their professors, counselors, and peers, providing them with additional preparation for the challenges they can expect to face in their careers. Recruiters believe that this constant communication with scholars is critical to both recruitment and retention success.

Finally, policymakers should note that improving education benefits is not the only vehicle for attracting high-quality recruits. An analysis by the Congressional Budget Office (CBO) shows that expanding the number of army recruiters represents a cost-effective approach to recruiting officer-quality candidates. Data indicate that it costs $40,000 to field one additional recruiter who produces an average of 1.8 officer-quality recruits annually. The CBO concluded that from a cost-per-recruit perspective, hiring additional recruiters was nine times more efficient than increasing the pay of new recruits' by 10%, and significantly less expensive than improving educational benefits or increasing Army noncommissioned enlistments.[29] While hiring additional

recruiters eventually produces diminishing returns, hiring a few persons to recruit teachers is a method states could use in conjunction with other reforms for recruiting prospective teachers.

In sum, the ROTC's service-payback scholarship program has become an essential recruiting and training tool for U.S. Army officers. One recruiter stated flatly, "To survive, we must have ROTC." The success in obtaining a large cadre of talented recruits can be attributed to the significant size of the scholarships as well as to the active communication and enforcement systems the Army employs.

LAW ENFORCEMENT

The federal government instituted an ambitious student financial aid program for those in the criminal justice system. Unlike the NHSCSP and ROTC programs which addressed specific personnel shortages, the Law Enforcement Education Program (LEEP) was a broad-based educational program designed to enhance the overall quality of the nation's police by improving their educational backgrounds. LEEP experienced many of the advantages and disadvantages generally associated with student financial aid programs. The program enjoyed tremendous popularity among the institutions, faculty, and students connected with the program, but was fraught with administrative problems ranging from inadequate record-keeping and a lack of enforcement mechanisms, to ambiguous goals.

LEEP was created in the wake of rising crime rates, campus disorder, and inner-city riots that took place in the late 1960s. It was administered by the Law Enforcement Assistance Administration (LEAA), as established under the Omnibus Crime Control and Safe Streets Act of 1968. The underlying assumption of LEEP was that the tasks performed by police officers, judicial personnel, and correctional employees had become sufficiently complex that college-educated personnel were needed to perform them. The government hoped to raise educational levels by issuing in-service and pre-service financial aid in return for a service commitment.

During its decade of existence (1970-1980), LEEP provided funds to 336,711 participants -- both to individuals currently working in law enforcement (in-service) and to those planning careers in this field (pre-service). In-service "grants"[30] provided up to $250 per quarter or $400 per semester towards the educational expenses of employees working for public police, courts, corrections, or juvenile justice agencies. The aid could be used for coursework leading to degrees in the social, behavioral, or managerial sciences. In exchange, grant recipients agreed to remain in the criminal justice profession for two years after completing the portion of their coursework financed by LEEP. Recipients who failed to meet their obligations were required to repay the "grant" amount, plus a 7% annual interest rate. Pre-service "loans" were similarly designed to encourage students to pursue careers in criminal justice. Loans of up to $2,200 per academic year were issued to college students in crime-related degree programs. These loans were then forgiven at a 25% rate for each year of service in a criminal justice agency. Failure to gain such employment required repaying the value of the loan, plus interest at a 7% annual rate.

From an educational attainment perspective, LEEP greatly increased the number of officers with a higher education. The percentage of sworn police personnel who had completed one or more years of college increased from 20% in 1960 to 47% in 1974. Moreover, the percentage of new recruits entering the criminal justice profession between 1970-74 who had attended college was nearly double the cohort who had entered between 1965-69.

Although other factors may have also influenced this trend, there is little doubt that much of these gains can be attributed to the LEEP service-payback program. Many believe that the loss of LEEP funding was the cause of the elimination of criminal justice programs at many universities.[31]

Although its achievements were impressive, LEEP suffered a number of problems in the administration of financial aid, including difficulties in the billing, collection, payment, reporting, and verification processes.[32] For example, 84% of the recipients billed failed to respond. In addition, minimal efforts were made to collect from those who either failed to pay their bills or who had not qualified for forgiveness. The LEAA responded by simply sending more bills. Nonpayers were not contacted by phone, nor did the Justice Department bring legal action against delinquent borrowers. The GAO found that,

> LEAA's collection policies and procedures encourage nonpayment of bills and cause low collections. By ignoring their bills, individuals are able to avoid repayment. There is no incentive to pay, since LEAA does not seriously attempt to collect nor is any penalty imposed on nonpayers. Thus, LEAA collects much less than is owed.[33]

These collection difficulties are partly attributable to the lack of adequate staff assigned to collect the money. Indeed, only four full-time staff, two part-time employees, and twelve student aides from local high schools were responsible for maintaining over 200,000 active accounts.

In regard to forgiveness, certification of employment was uncontrolled, resulting in incorrect calculations. Many recipients did not certify their employment, the validity of existing certifications was not tested, and proper certifications were not processed. The GAO concluded,

> LEAA management did not adequately control granting forgiveness and did not carry out the Congressional mandate to forgive grants and loans only when the recipient was employed by a law enforcement or criminal justice agency for a specified period. Virtually anyone returning a certification could earn forgiveness, eligible or not. At the same time, some eligible aid recipients were/are not given the forgiveness to which they were entitled.[34]

LEEP issued a total of $338,258,544, approximately 78% of which was in the form of in-service "grants." To date, five years after the last LEEP funds were allocated, approximately 75% has been forgiven through service; 2% returned in payments; 1% cancelled due to death, disability, or bankruptcy, and over 20% is still unaccounted for.[35] Although the Department of Education (which assumed responsibility for LEEP as of May, 1980) and a private collection agency continue to collect money, it is doubtful that the government will recover all the funds it is owed. Unlike the NHSCSP, which is aggressively pursuing defaulters, the Department of Education is not planning to prosecute defaulters through the Department of Justice.

Many of the administrative problems LEEP experienced can be avoided in future programs by using knowledge gained from past experiences. Enforcement offices should be equipped with

proper computer technology and an adequate staff. In addition, the Justice Department must pursue and prosecute defaulters. Despite these shortcomings, federal student aid in LEEP did raise the educational level of employees in the criminal justice system. As one observer stated,

> While it is a subject of serious debate in academic circles regarding whether the programs developed, offered, and met traditional academic standards, there can be no doubt that LEEP raised the educational level of law enforcement and criminal justice personnel.[36]

TEACHING

National Defense Student Loans

The final example of a federal financial aid program intended to recruit individuals into a specific profession can be found in the teaching profession itself. As a response to a teacher shortage in the Baby Boom era, Title II of the 1958 National Defense Education Act allowed National Defense (renamed Direct) Student Loans (NDSL) to be partially forgiven in return for teaching in certain elementary and secondary public schools. This incentive was eventually expanded to include teachers working with handicapped students in Head Start (a War On Poverty program), and those on active duty in the United States Armed Forces.[37] For each year an individual taught in an eligible program, 10% of the principal and interest on a loan was forgiven, up to a total of 50%. The public generally perceives the NDSL program as effective, despite its limited impact.

The College Entrance Examination Board's review of the loan forgiveness program found that this "incentive" had minimal effects on the nation's supply of teachers. This finding was derived by comparing the rate of increase in the number of classroom teachers before and after the forgiveness program was instituted.[38] The primary reason for this failure to influence career decisions appears to be that the amount of the debts forgiven under the NDEA program was relatively small. The data in the following table shows the average amount of principal forgiven.

TEACHER LOAN FORGIVENESS UNDER NATIONAL DEFENSE STUDENT LOAN PROGRAM, 1959-67[39]

Fiscal year	Number of 1st-time Loans Forgiven[A]	Total Number of Loans[B]	Principal Forgiven	Interest Forgiven	Average Principal Forgiven
1960	346	346	$12,732	$152	$37
1961	3,776	*	220,305	7455	*
1962	12,703	*	1,072,007	105348	*
1963	17,984	*	2,288,076	326144	*
1964	27,998	*	4,462,549	680677	*
1965	33,438	80,700	6,688,712	1078177	83
1966	46,650	188,397	9,960,447	1673060	84
Total	**142,896**	.....	**24,704,828**	**3,971,013**	.....

A Cumulative Report of National Defense Student Loan Accounts, Division of Student Finanical Aid. December, 1967.

B Annual Report on National Defense Student Loans, Division of Financial Aid, U.S. Office of Education. December, 1967.

* Not available.

The table above shows that the average principal forgiven was $84 a year, or $425 over five years. This amount appears to be relatively insignificant in view of the fact that the average teacher salary in 1966 was $6,500.[40] It certainly did not serve as a catalyst for large numbers of persons to choose careers in teaching.

In sum, the loan forgiveness provisions in the 1958 NDEA provided a "windfall" for those who would probably have become teachers regardless of these government incentives. After analyzing the effects of the NDEA loan forgiveness program, a (1983) Congressional Research Service study concluded that,

> "...one is struck by the irony that, although over 1 million borrowers have had nearly half a billion dollars forgiven, there is little positive effect noted in the literature concerning NDSL forgiveness."[41]

Assumption Program of Loans For Educators

An example of a potentially excellent loan forgiveness program for recruiting prospective teachers can be found in California. In 1983, the California legislature passed the Hughes-Hart Education Reform Act (SB 813). This omnibus bill established the Assumption Program of Loans for Educators (APLE)[42] which was to help the state's public schools attract and retain competent teachers in mathematics, science, and other shortage areas.

Administered by the California Student Aid Commission (CSAC), APLE allows 500 teachers to each have up to $8,000 forgiven in outstanding student loans. The loans are forgiven over three years with annual payments of $2,000, $3,000, and $3,000 towards the outstanding balance of a teacher's student loans. Although the legislation was intended to provide a financial incentive to prospective teachers, it also helps to retain teachers currently working, due to the CSAC's stringent eligibility requirements that include current employment as a teacher. An individual qualifies for APLE only by meeting all the following criteria:

1. Is employed as a full-time, departmentalized, mathematics, science, or bi-lingual teacher in Grades 7-12.

2. Possess a valid California teaching credential from the Commission on Teacher Credentialing.

3. Has an outstanding student loan balance in the form of Guaranteed Student Loans (GSL), Federally Insured Student Loans (FISL), National Direct Student Loans (NDSL), California Student Loans to Assist Students, and/or other student loans that are approved by the California Student Aid Commission.

4. Agrees in writing to teach three consecutive years in a California public school district currently experiencing an extreme shortage of secondary level mathematics, science, or bi-lingual education teachers.

5. Is selected to the APLE program by the superintendent of the school district. (The 500 state-wide scholarships are allocated in advance on the basis of districts' severity of teacher shortage.)

6. Works in a district with allocated shortage positions and agrees to file his/her share of the paperwork.

7. Faithfully meets all student loan repayment obligations.[43]

Some of APLE's problems are cited in the California Legislative Analyst's Office report, which concluded, "... as implemented by the SAC, the APLE program serves only to reward existing teachers by, in effect, providing those selected with a salary bonus. Not only is this contrary to legislative intent; it serves no statewide interest whatever."[44] Once again, it appears that a loan forgiveness program is closer to a "windfall" for those already committed to teaching than it is a catalyst for leading students to make a commitment to teaching. Legislation to expand the APLE

program to make it more recruitment-oriented has been introduced.[45] If passed, the new law would allow pre-service college students to apply for loan forgiveness. The theory behind APLE represents a positive step toward alleviating shortages of teachers in certain areas, but the program's design must be altered, and more scholarships must be made available.

In sum, a review of past programs continually points to several trends. Programs based on the loan forgiveness model have a disappointing record for inducing individuals into specific careers. In contrast, programs based on the service-payback model have proven quite successful. In addition to the differences between the two types of programs discussed above, an even greater difference between them involves psychological factors. That is, a person considering entry into a professional program is more likely to be influenced by immediate benefits than by a future promise of debt redemption.

OTHER FORMS OF AID

All of the aforementioned programs utilized either loan forgiveness or service-payback financial aid. Although these are the most prevalent forms of career-targeted aid, other forms are available and merit analysis. I will now briefly describe some of the advantages and disadvantages of grants, low-interest loans, and sponsored employment programs.

Grants/Scholarships

The most traditional form of financial aid is a direct scholarship or grant which can be used effectively to increase opportunity or access for economically disadvantaged students (Pell Grant), to reward certain achievements or qualities (Regents Scholarship), or to influence actions in a particular way (athletic scholarships). Many have suggested offering scholarships or grants to encourage individuals to consider teaching.

Although this approach appears attractive, it involves a questionable use of scarce resources. The primary drawback to this non-commitment form of aid is the very aspect that makes it attractive to potential recipients: there is no obligation to provide the service (teaching). It is conceivable that large sums of money could be given to potential teachers who never enter the classroom. In contrast to a service-payback program which binds the recipient of the aid, the government has no recourse for collecting from "defectors." One can imagine the potential abuses in this type of program. A further disadvantage is that, just as all

the Great Society programs were viewed in combination by their detractors, it is conceivable that this type of "hand-out" program could jeopordize other education reforms.

Should career targeted grants be issued at all? It might be more effective to offer smaller amounts to a larger number of individuals than to provide larger scholarships to fewer recipients. By offering smaller grants ($250-$1000 per year) policymakers can send a message to prospective teachers that they are needed in our schools.

Subsidized Student Loans

Subsidized student loans (without forgiveness provisions) are an alternative incentive for potential teachers. Such a loan program would be analogous to the National Direct Student Loan (NDSL) and the Guaranteed Student Loan (GSL) programs. These federal programs issue loans to students as a means to expand access to and choice of higher education institutions. They are deemed "subsidized" because the government covers the difference between the loan rate and the cost of borrowing money on the open market, pays the interest payments on the loan while the student is in school, and provides insurance in the event of default.

Large federal student loan programs were started in 1958 with National Direct Student Loans. The need-based NDSL's offered loans to qualified college students at 3% interest (the approximate cost of money in 1958), with extended repayment available. The GSL program was authorized by the Higher Education Act of 1965.

Eligibility for this subsidized student loan program was eventually expanded by the Middle Income Assistance Act (MIAA) of 1978. This program has generated billions of dollars annually in new loan capital directed toward higher education, with the loans administered by banks, credit unions, and savings and loan associations.

Even though government subsidized student loan programs are widely used, many analysts consider them to be an inefficient use of government resources for three primary reasons. First, the government must make the interest payments on the loans while the students are in school. Second, when inflation increases the cost of borrowing money, the government is forced to pay this price too. Third, the default rates on student loans are relatively high and once again, the government makes up the difference. Indeed, the government pays approximately fifty cents for every dollar loaned.[46] An outright grant would not cost considerably more. In addition, experience shows that many students (particularly those from low socio-economic backgrounds) are hesitant to incur debt. Although impossible to document, it appears that loans saddling a student with large debts can encourage a prospective teacher to enter higher-paying professions. Research on the effects of student loans on students' persistence (defined as the rate at which enrolled students complete their studies within a certain time) illustrates another drawback of student loan programs. Astin[47] and Hochstein and Butler[48] found that students who obtained loans took longer to complete their studies than those who did not receive aid. Thus,

despite the fact that billions of dollars are loaned each year, one commentator quipped that the end result of the NDSL and GSL programs is that politicians and students both regard them as a necessary evil.[49]

From a teacher recruitment perspective, therefore, experience shows that a traditional, low-interest student loan program is not as inexpensive as it might appear, and is unlikely to induce significant change in a person's career choice. Indeed, it may actually be counter-productive because the prospect of repaying loans from a relatively modest teacher salary may discourage potential applicants.

Sponsored Employment

The federal government's sponsored employment program, College Work-Study (CWS), has an impressive record. Modeled after the National Youth Adminstration (NYA) student work program of the 1930s, CWS functions as a need-based program designed to stimulate and promote part-time employment for economically disadvantaged college students as an alternative for financing their college education. CWS participants are employed either on campus, in public or private non-profit organizations, or in federal, state, or local public agencies. The government pays up to 80% of a participant's salary.

Concern about the effect of employment on a student's academic achievement led to a series of studies that repeatedly show that if students work sixteen or fewer hours per week, part-time employment does not adversely affect their academic

performance.[50] [51] Astin (1975) found that participation in College Work-Study programs significantly increases students' chances of successfully completing college. This trend is particularly evident among women, blacks, and students from middle-income backgrounds.[52] Herndon's (1984) two year longitudinal study of student persistence also demonstrates that CWS participation is a good predictor of academic persistence.[53] Moreover, Weiker studied college freshmen and found that 67% who remained in school stated that student employment was a determining factor in their persistence. This is a significantly higher rate than the 49% who remained in school because of scholarships.[54]

The popularity of sponsored employment derives from a variety of factors. First, students are accorded increased financial resources. Second, the CWS program encourages students to become more involved in campus activities and to acquire skills and work experiences that often assist them in their career development. Third, schools favor the program because the employer of the CWS student enjoys the services provided by the recipient. Finally, work-study is popular with politicians because it emphasizes the "self-help" philosophy.

Experiences with federal CWS programs could be translated locally to assist states in attracting more qualified people to teach. For example, many educational policymakers are considering the addition of undergraduate classroom experience to the standard teacher education curriculum with the hope of exposing large numbers of undergraduates earlier to the possibility of a teaching career. Thus, sponsored-employment programs could be

established in public schools to encourage college students to work part-time in teaching-related jobs both during the academic year and summers. Possible positions could include working as a teacher's aide, tutor, or librarian in a local school. Placement could focus on schools or subjects experiencing personnel shortages. In these cases, a work-study tutor might be a godsend to a school that would otherwise not receive assistance.

DISCUSSION

Education policymakers can learn a great deal from prior use of financial aid as a recruiting device. Although recruitment issues for the teaching profession are unique, patterns in targeted financial aid recur. The final two sections review these findings, offer guidelines for future financial aid programs, and provide recommendations for programs designed to recruit talented persons into teaching.

In order to tailor a financial aid program to alleviate a teacher shortage, the problem must be further defined. Although there is a general perception that a "teacher shortage" currently confronts this nation's public schools, its exact nature and scope remain unclear. One version holds that there is a general shortage in both the quality and quantity of incoming teachers. A second variation emphasizes the geographic maldistribution of the teacher workforce, and its resulting inequities for schools located in inner-city or rural areas. A third variation maintains that the shortage is subject-specific; that shortages are confined to a few specialized subjects.

Although there are no absolute matrices available for comparing the alternative forms of aid, based on my understanding of their effects, I can predict their effectiveness as tools for recruiting talented students into teaching. The following chart arrays the three shortage possibilities (general, geographic and subject-specific) against the four primary policy vehicles of

student aid (loan forgiveness, service-payback, scholarships, and sponsored employment) that could alleviate these shortages. A (+) denotes that a particular form of aid is feasible. A (-) suggests that its weaknesses outweigh its strengths and is, therefore, not feasible.

AREA	GENERAL	GEOGRAPHIC	SUBJECT
LOAN FORGIVENESS	-	+	+
SERVICE-PAYBACK	+	+	+
SCHOLARSHIP	+	-	-
SPONSORED EMPLOYMENT	+	+	+

ASSUMPTION: Maximum amount of aid for all the programs is $20,000 per person.

Loan Forgiveness. The National Direct Student Loan and the Health Professions Student Assistance Program loan forgiveness programs have not been successful in recruiting large numbers of individuals into specific professions, primarily because the amounts forgiven were not large enough to lure people into a new profession, and many potential program participants were unaware of the program's existence (HPSAP). Loan forgiveness programs tend to be more of a windfall for those who have already chosen their careers; these programs do not offer up-front money and their benefits are too delayed. The primary advantage of loan forgiveness is that it can alleviate specific shortages. For example, California's APLE program is aimed solely at people teaching in

schools suffering from critical teacher shortages. In this instance, it functions as a hidden pay differential. If a shortage of teachers is either due to geograhic maldistribution or is subject-specific, a generous loan forgiveness program is a feasible alternative.

SERVICE-PAYBACK. The service-payback programs in the medical and military fields have enjoyed success in bolstering personnel supply. In law enforcement, the goal of increasing the educational levels of police personnel was also attained. Although service-payback and loan forgiveness programs seem almost identical, in practice, people seem more willing to commit themselves to serve later, if they receive the benefits up-front. Also, a service-payback program can not only recruit large numbers of people into a profession (as does ROTC), but it can also fill "hard-to-staff" positions.

SCHOLARSHIPS. Grants appear to be ineffective as a tool to extract commitments from prospective teachers. They certainly cannot guarantee service in an underserved area. This type of award almost seems self-destructive. Once potential recipients know that they can "take the money and run," there is no stopping them (or financial aid departments) from violating the spirit, if not the letter of the law. The single advantage of this form of aid is that states can use it to send a message to prospective educators that teachers are needed in the state's classrooms.

SPONSORED EMPLOYMENT. The "self-help" sponsored employment program has enjoyed great success in certain instances. Such a program would issue financial aid to students in exchange for a commitment to work in public schools during

college. Jobs could include working as a tutor or teacher's aide. The benefits of this program are manifold. Such a "self-help" program could enable prospective teachers to acquire relevant experience, provide them with "mentors" in the field, and enhance their ability to make wise career choices. It also provides opportunities for school districts with limited resources to complement their classroom instruction with individual tutoring at a subsidized cost. Universities would enhance the educational experiences of their students by offering this supplemental program, and the financial remuneration would improve students' access to undergraduate and graduate teacher education. The primary drawbacks of sponsored employment are that it might lead participants into a profession with which they may be uncomfortable and that it would require close coordination between the state, university, and local school district. With respect to teacher shortages, a work-study program can be used either to expose larger numbers of students to teaching, or to recruit only those with special skills. Priorities for receiving aid could be given to those who are bilingual, have strong mathematics or science backgrounds, or who work in "hard-to-staff" schools.

POLICY GUIDELINES

Based on past experience with student financial aid, the following ten commonalities can serve as policy guidelines for future incentive programs aimed at recruiting persons into specific professions:

1. Carefully Define the Need. Before embarking on an ambitious program, policymakers must clearly define the need for an incentive program. Only after this is done can a program be tailored to redress a problem.
2. The Right Form of Aid. As the above research demonstrates, not all student aid programs are equally effective. Programs should be tailored to meet specific needs.
3. The Proper Amount of Aid. Prospective recruits must perceive that the benefits are worth pursuing. Insignificant awards will not inspire significant commitment. This relation between size of award and participation rate is manifest in both the ROTC and NHSCSP programs. In addition, as a way of preserving their effectiveness, awards should be indexed to the inflation rate.
4. Consider the "Pipeline" Factor. The pipeline represents the number of years from when individuals decide to teach to when they start providing the service. Generally, the longer the pipeline, the greater the risk that an individual will change career plans.

5. Accepted Criteria for Selection. Planners need to determine the qualifications of recipients. Priorities could be granted to those with special skills.
6. Rigorous Enforcement. The conditions of assistance and the ramifications for violating the agreement must be clearly stated and enforced. The lack of adequate enforcement mechanisms contributed to a high default rate in LEEP and other student loan programs. An example of what rigorous enforcement can accomplish is found in the NHSCSP and ROTC scholarship programs.
7. Active Communication. Recipients should be contacted regularly so that they know what is expected of them. Such communication adds to the sense of purpose and helps build an esprit de corps among participants. This is particularly critical in the service-payback programs.
8. A Visible Political Constituency. A visible constituency is crucial when lobbying elected officials for funds. Subsidized student loan programs have survived political vicissitudes for nearly three decades due, in part, to broad-based political support.
9. Aggressive Public Awareness Campaign. Prospective program participants must be aware of the program. The ROTC media campaigns provide a model of such an awareness campaign.
10. Targeted Groups. A program can be tailored so that individuals with certain qualities are likely to participate.

Preference can be given to persons with special skills or exceptional backgrounds.

These policy guidelines will now be used as a framework for constructing a teacher recruitment program.

PROGRAM RECOMMENDATIONS

I recommend that states establish what I shall call TEACHER CORPS FELLOWSHIP programs (TCF) in order to recruit talented people into the teaching profession. TCFs would have both a service-payback and a sponsored employment program. The service-payback component would operate on a similar basis to the ROTC or the NHSCSP programs, while the sponsored employment program offers students jobs in the public schools. Eligible students would be able to choose either of the two program modalities. In states as large as California, two thousand of these fellowships should be established annually for high achieving students.[55]

The name "Corps" is appropriate, because the TCF would call upon this generation of idealistic college graduates as the Peace Corps did for the last generation: to address the most urgent needs of our society. The programs are distinct, however, in that the TCF program deals with the futures of those living in Los Angeles and San Francisco, rather than in distant places such as Botswana or Micronesia. Likewise, calling it a "fellowship" as opposed to just another financial aid program implies a high standard of excellence. Details of the program will now be described in accordance with the stated policy guidelines.

1. Carefully Define the Need. This requires an assessment of the nature and scope of a state's teacher shortage, including the

collection of data on changes in teacher supply, student population, and special needs. An effective incentive program can then be designed and implemented to meet these needs.

2. Right Form of Aid. Experience demonstrates that the service payback and sponsored employment forms of aid are the most effective strategies for teacher recruitment.

Fellows participating in the service-payback program would receive a fellowship for each academic year of post-secondary study in return for preparation to become elementary or secondary schoolteachers. The Fellowship could begin either during undergraduate or post-baccalaureate study. In exchange for the TCF service-payback award, recipients would be obligated to teach in a public elementary or secondary school within 10 years after receiving the assistance. Expected service would be one year for each year assistance is received. (This mandatory service could be reduced by a certain percentage if the recipient teaches in a critical shortage subject or works in a "hard-to-staff" school.) In the event that students fail to meet their service obligation, they would have to repay a pro-rata portion of the scholarship, plus an interest rate to be stipulated in advance, such as the Guaranteed Student Loan rate, plus 5%. This penalty would inhibit schemes for receiving "cheap money" at state expense. Exceptions to this service-payback requirement would be allowed for such cases as disability, extended military service, renewed full-time study, or inability to obtain a teaching position. To prevent abuse of these

exceptions, it is imperative that they be explicitly described in advance.

Fellows choosing the sponsored employment component could work as tutors, teachers' aides, counselors, parent liasons, etc. This program would assist teacher recruitment efforts by exposing a larger number of individuals to the possibility of teaching as a career. It would also provide prospective educators by giving them firsthand experience. The program is based on the premise that effective teacher training programs require the integration of theory, observation, demonstration, practice, and coaching. Extensive classroom experience and supervision can be garnered using the work-study genre. Sponsored employment programs have positive effects on both student persistence and achievement. In addition, the "self-help" philosophy embodied in the work-study program would be popular with political interests and the public.

3. The Proper Amount of Aid. For the service payback Fellows, the amount must be significant enough to persuade those who have not yet chosen teaching as a career. Although the value of the fellowship could be the same over the four undergraduate years, I suggest that the amounts be structured in steps, for example, $2,000 to those with less than 45 quarter units (freshmen), $3,000 for those with 90 units (sophomores), $4,000 for those with 135 units (juniors), $5,000 for seniors, and $8,000 for those in the fifth-year teacher credentialing program. The maximum fellowship would be $20,000, with the maximum

commitment to teach being five years. This approach requires a maximum of $4,000 per year to recruit a talented student into teaching. Those participating in sponsored employment program would be paid $7.50 an hour. The maximum amount earned would correspond to the amounts service-payback Fellows receive.

4. Consider the "Pipeline" Factor. College freshmen face a minimum of five years of education before they can become fully credentialed teachers. Since the shortage of teachers exists both in the short and long run, it makes sense to target incentive programs to those individuals nearing the end of their undergraduate or graduate training. Graduated award levels will give additional inducements to upperclasspersons and college graduates who can make an impact within a year or two. Moreover, underclassmen are more likely to change career plans than are juniors and seniors.

5. Accepted Criteria for Selection. A selection committee should be established to develop criteria and procedures for selecting Fellows. Considerations could include the applicant's grade-point average, extra-curricular activities, background, specialized skills, financial need, an expressed intention to teach, an essay, letters of recommendation, and a personal interview.

Recipients of these coveted and widely-publicized awards would be high school students graduating in the top 25% of their classes as well as college students ranked in the top third of their classes. Since the fellowship progam supplements existing need-

based financial aid programs, it should be merit-based. In lieu of class rank, those not currrently enrolled in schools could qualify by passing the teachers proficiency exam such as the California Basic Educational Skills Exam or by attaining a certain Standard Achievement Test or Graduate Record Exam score. This flexibility allows prospects to decide at a variety of stages whether to become teachers.

6. Rigorous Enforcement. One lesson learned from all these programs is that enforcement of a program's requirements is a critical element to its success. To discourage potential abusers of the program, recipients must know that failing to honor their service commitment means paying the buy-out costs. The service requirement would be enforced in a number of ways, including the withholding of transcripts, informing the IRS, or damaging credit ratings. Enforcement and monitoring responsibilities could come from a state's Student Aid Commission and should be adequately funded.[56]

7. Active Communication. Both components of the TCF require communication between the program administrators and sponsors to inform Fellows about current issues in education, job placements, teacher training, as well as obligations (for service-payback Fellows) to the state. Newsletters, student and faculty liaisons, a toll free hot-line, and conferences on college campuses would help accomplish this task.

8. A Visible Political Constituency. The political process involves competition among interest groups for scarce resources. At present, a financial aid program such as TCF lacks a natural constituency. Passage of the proposed incentive program will require broad-based suport from teacher unions, school districts, colleges and universities, education support groups, and others interested in improving teacher quality in the public schools.

9. Aggressive Public Awareness Campaign. Prospective participants must be made aware of TCF. This can be accomplished through an ambitious public relations campaign. A media blitz utilizing public service announcements, campus newspapers, and direct mail could contribute to an effective recruiting drive. A public-awareness effort should emphasize the valuable contributions teachers make in our society.

10. Targeted Groups. Once the dimensions of the supply and demand for teachers in a state are determined, a program could be tailored to fit that need. An example appears in the under representation of Hispanics in the California teacher workforce.[57] Should policymakers seek to recruit larger numbers of Hispanics without using direct quotas, they could give Fellowship priority to bilingual students or set aside a large number of Fellowships for universities containing large Hispanic student bodies. Similar strategies could be employed to recruit high-achieving students, mathematics or science majors, or those most likely to work in "hard-to-staff" schools.

These programs could be funded through a variety of sources. States, school districts, and the private sector could share the costs. A variety of marketing techniques could be employed to attract sponsors. To gain support of state lawmakers, these fellowships could be named in honor of the elected official who nominate the Fellows, for example, the "Teresa Hughes Teaching Fellowship." The nominating process could be modeled after the system by which congressional representatives make appointments to the military academies.

Another source of funding could be a consortium from the private sector, which is very concerned about the issue of teacher quality. This Fellowship program provides members of the private sector with an opportunity to make a direct contribution toward improving the quality of educators in the public schools. Just as with the elected officials, corporations and foundations could obtain recognition from their contributions -- Lockheed might fund 20 "Lockheed Teaching Fellows." An additional source of funding might be a state lottery: the state's portion of the profits could be applied toward education. The provision of financial aid for talented students entering the teaching profession constitutes an intelligent use of such revenue.

If our public schools are to be staffed with excellent teachers, a variety of changes must occur including increasing teachers' salaries, improving relationships between faculty and administrators, and upgrading working conditions. Recruiting

high-caliber talent is a necessary, albeit insufficient condition. Given the proper design and administration, a financial aid program can be a policy vehicle for luring persons into teaching.

The programs outlined in this paper will attract talented individuals into the teaching profession by offering them financial rewards and prestige. This analysis of recent experience with the use of financial aid to recruit capable college students into various occupations leads to a firm conclusion: service-payback and sponsored employment are promising, practical recruiting devices; scholarships and loan forgiveness are not.

FOOTNOTES

[1]Report of the National Commission on Excellence in Education. "A Nation At Risk: The Full Account." USA Research, Cambridge: March 1984. p. 77.

[2]The Talented Teacher Act (H.R.-4477) was passed by Congress in 1984, and allows for 10,000 "Carl D. Perkins Scholarships" to be issued between 1986-1990 to outstanding high school graduates who demonstrate an interest in teaching. To date, it has yet to receive appropriations.

[3]Albert B. Hood and Cheryl K. Maplethorpe, "Bestow, Lend, or Employ: What Difference Does it Make?". The Impact of Student Aid on Institutions. New Directions for Educational Research, 25. Jossey-Bass. San Francisco: 1980.

[4]This program was initiated in the Health Professions Educational Act of 1963 (P.L.-88-129), the Public Health Service Act of 1964 (P.L. 88-654), the Health Professions Education Assistance Act of 1965 (P.L. 89-290), the Allied Health Professions Training Act of 1966 (P.L. 89-751), and the Comprehensive Health Manpower Act of 1971 (P.L. 92-157).

[5]Health Manpower Shortage Areas are geograhic regions that the Secretary of Health and Human Services in conjunction with the various State health authorities designate as having a shortage of health professionals. Factors taken into consideration include the numbers of health practicioners, the residents' access to medical services, and particular local health problems.

[6]Although the percentages eligible for forgiveness changed slightly over the years, the core of the program was constant.

[7]General Accounting Office, "Congressional Objectives of Federal Loans and Scholarships to Health Professions Students Not Being Met," B-164031(2), May 24, 1974. p. 40.

[8]Ibid. p. 50.

[9]General Accounting Office, "Progress and the Problems In Improving the Availability of Primary Care Providers in Underserved Areas." HRD-77-135. Aug. 28 1978.

[10]Ibid p. 50.

[11]Ibid p. 56.

[12]U.S. Department of Health and Human Services. Unpublished data.

[13]Government Accounting Office, 1978, op. cit., p. 52.

[14]Department of Health Education and Welfare. Health Program Memorandum, Printed in the Congressional Record, July 24, 1973.

[15]U.S. Senate, Emergency Personnel Act Amendments of 1972, Report of the Committee on Labor and Public Welfare. (Senate Report No. 92-1062, 1972.)

[16]Fact Sheet, National Health Service Corps, U.S. Department of Health and Human Services. Rockville, MD. March 1985.

[17]U.S. Department of Health and Human Services. Characteristics of Medical Students in the National Health Scholarship Program, 1973 through 1980. Final Report, DHHS Publication No. (HSA) 81-6034, 1981 p. 12-13.

[18]Valerie Ellen Stone M.D., "Toward Public Policy Influencing The Geographic Distribution of Physicians: The Case of the National Health Service Corps Scholarship Program," Yale University School of Medicine, Unpublished [1984]. p. 73. Citing U.S. Department of Health Education and Welfare. "Training Health Manpower for Underserved Areas 1973-79, A Report to the People on the NHSC Scholarship Program," (1979) p. 5.

[19]Stone, V. E. p. 105. Citing Third, Fourth, and Fifth Annual Reports to Congress on the NHSC Scholarship Program, and "81st-83rd Annual Reports on the Medical Education in the U.S.," Journal of the American Medical Association.

[20]Department of Health and Human Services. "Characteristics of Medical Students in the National Health Service Corps (NHSC) Scholarship Program, 1973 Through 1980." (HSA) 81-6034.

[21]Stone, op. cit.

[22]The average bill was $44,000, but with higher tuition schools and 24% annual interest rates, many bills were well into the hundreds of thousands of dollars.

[23]Joseph M. Brown, Director, Office of Financing Services, Bureau of Health Care Delivery and Assistance, Department of Health and Human Services, Rockville, MD., Interview May 2, 1985.

[24]Ibid.

[25]Ernest Michelson and Norman Crondquist, "Scholarships Now for Service Later: Meeting the Health Manpower Needs of Medically Underserved Areas," Public Health Reports, January-February, 1979, Vol. 94 p. 16.

[26]The minimum qualifying score on the Standard Achievement Tests is 850 out of a possible 1600; the average score is over 1000.

[27] Opening Enrollment Report: School Year 1984-85, Army Reserve Officer Training Corps, U.S. Army Training and Doctrine Command, Fort Monroe, VA. ATR0-RM, Dec. 1984. The student population total represents the Army's estimate of those eligible. For instance, at the University of San Francisco, there is a large number of international students considered ineligible for scholarships. Some universities, such as Stanford, do not currently have Army ROTC programs.

[28]Congressional Budget Office. "Improving Military Educational Benefits: Effects on Costs, Recruiting, and Retention." March, 1982.

[29]Ibid.

[30]Despite the fact that LEEP nominally termed in-service "grants" and pre-service "loans," both programs are actually service-payback loans, because both require future employment for forgiveness.

[31]Edward J. Mack. The Law Enforcement Education Program: The Criminal Justice Internship Program, As Viewed by the National Manpower Survey. Office of Student Financial Assistance, Department of Education. October, 1980.

[32]General Accounting Office, "The Law Enforcement Education Program Is In Serious Financial Disarray." FGMSD-80-46. June 4, 1980.

[33]Ibid. p. 12.

[34]Ibid. p. 22.

[35] Education administrator responsible for collecting LEEP funds. May, 1985. Interview

[36]Ernest E. Allen. "LEAA and State and Local Governments." In Federal Aid to Criminal Justice: Rhetoric, Results, Lessons. By John K. Hudzik. The National Criminal Justice Association. Washington, D.C.: 1984. p. 217.

[37]Loan forgiveness was eventually limited only to those teaching in economically deprived areas and those teaching the handicapped. Currently 25% of California's schools are eligible.

[38]U.S. Senate, Committee on Labor and Public Welfare. Subcommittee on Education. Notes and Working Papers Concerning the Administration of Programs Authorized Under Student Financial Aid Statutes. 90th Congress, 2nd Session. Washington, U.S. Government Printing Office, 1968. p. 46.

[39]Ibid p. 46.

[40]Ibid. p. 47.

[41]Jim Stedman, "The Experience with Loan Forgiveness and Service Payback in Federal and State Student Aid Programs." Congressional Research Service. The Library of Congress, January 27, 1983.

[42]Originally called the California Teacher Shortage Loan Assumption Program.

[43]Assumption Program of Loans for Education, District Fact Sheet, July, 1984.

[44]California Legislative Analyst, Analysis of the 1985 Budget Act. Report on Postsecondary Education Item 7980 D, p. 1442.

[45]Referring to SB 1208, introduced by California State Senator Gary Hart.

[46]This represents a rule-of-thumb estimate. The actual cost varies according to the prevailing interest rate, the length of the loan repayment period, and the default average.

[47] Alexander W. Astin, Preventing Students From Dropping Out. San Francisco: Jossey-Bass Publishers, 1975. p 67.

[48]Susan M. Hochstein, and Robert R. Butler, "The Effects of the Composition of a Financial Aid Package on Student Retention." The Journal of Student Financial Aid, Vol 13 No. 1 Feb. 1983. p. 21-26.

[49]Robert N Kelly, "High Costs, High Need: The Independent College and Student Assistance," New Directions for Institutional Research: The Impact of Student Financial Aid on Instituions No. 25. Jossey-Bass San Francisco p. 22.

[50]Albert B. Hood and Cheryl K. Maplethorpe, "Bestow, Lend or Employ: What Difference Does it Make?." The Impact of Student Aid on Institutions, New Directions for Educational Research, 25. Jossey-Bass. San Francisco, 1980.

[51]Rhonda Dixon, "Term-time Student Employment: A Comprehensive Review." Presented at the Second Annual National Association of State Scholarship and Grant Programs and National Council of Higher Education and Loan Programs Conference, Washington D.C. June 1, 1985.

[52]Alexander Astin, Preventing Students From Dropping Out, Jossey-Bass, San Francisco, 1975.

[53]Steve Herndon, "The Impact of Financial Aid on Student Persistence." The Journal of Student Financial Aid Vol. 14, No. 2 (Spring 1984).

[54] Weiker, cited in Douglas Mckenzie, "Student Employment and Persistence," Journal of Student Financial Aid, Vol. 11, no. 2 May 1981.

[55]Two thousand represents 10% of the approximate 20,000 incoming teachers that California will need in each of the next five years.

[56]Administrative details for these programs could be worked out through the office of the Superintendent of Public Instruction (SPI). The SPI would establish criteria for eligibility and allocation of funds in accordance with statewide needs. This would allow the SPI to target areas with special needs.

[57]An examination of the racial and ethnic diversity of California school faculties shows that all non-white ethnic groups are under represented, particularly the Hispanics. Hispanics compose 26% of the student population of this state, yet total only 6% of the state's teachers. Cited in James Guthrie and Michael Kirst, Conditions of Education in California, Report of the Policy Analysis for California Education, The University of California, 1984.

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